



SDC SOLENOID DESIGN NOTE #168

TITLE: Air Shipment of SDC Solenoid

AUTHOR: Ron Fast

DATE: Dec 2, 1991

This design note consists of correspondence that I had recently with HeaviLift Cargo Airlines regarding the feasibility of shipping the detector solenoid from Japan to Dallas/Fort Worth. HeaviLift says that the solenoid can be airshipped on their Antonov AN-124 at a 1991 cost of \$420,000.



Fermi National Accelerator Laboratory
P.O. Box 500 • Batavia, Illinois • 60510

November 26, 1991

Peter Clark
Manager, North American Operations
Heavi Lift Cargo Airlines

Dear Mr. Clark,

Thank you for your interest in investigating the feasibility of air shipping a large superconducting solenoid magnet from Japan to Dallas/Fort Worth.

As background let me remind you that Heavi Lift moved a similar magnet from Narita Airport-Tokyo to O'Hare Field-Chicago in mid-July, 1984. That magnet was 3.4 m diameter, 5 m long, and weighed 12 tonnes. It just fit into the Belfast aircraft. Bruce Bird made the final arrangements with Hitachi, Ltd, the manufacturer of the magnet.

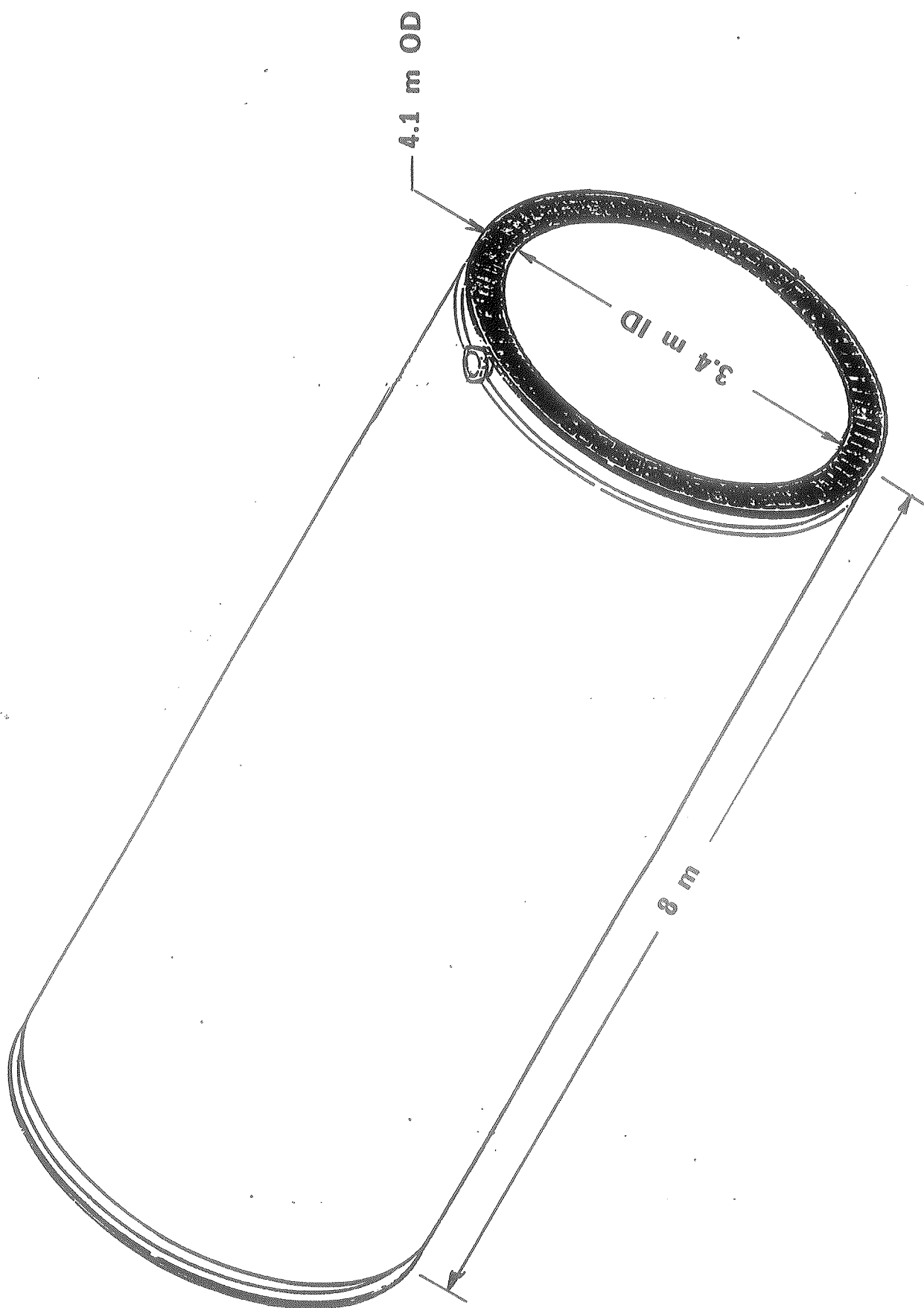
The new magnet will be somewhat larger in radius, substantially longer and heavier than the Hitachi magnet. It is in the form of a horizontal cylindrical annular aluminum vessel. The overall outer diameter of the vessel will be 4.1 m, the inner diameter will be 3.4 m, and the length will be 8 m. The weight will be about 23 tonnes. I hope that the attached sketch is clear, although the shipping skid is schematic only.

As I said on the phone, the magnet project is now in the conceptual design phase, with fabrication scheduled for 1994-1995 and shipment to DFW in mid-1996. However, the feasibility of air-shipping the magnet has an impact on design decisions being made right now.

Thank you for your interest. I can be reached by telephone (708-840-3381) if you have questions; my fax number is 708-840-4343.

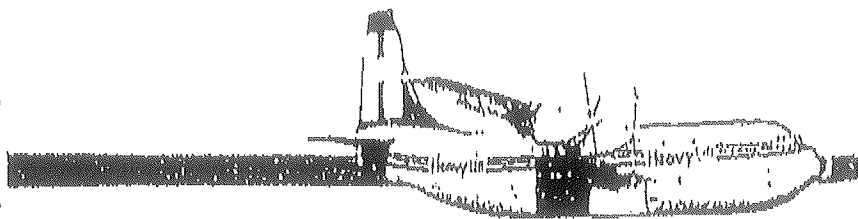
Sincerely yours,

Ronald W. Fast



HeavyLift

CARGO AIRLINES



FACSIMILE TRANSMISSION SHEET

TO: RON FAST
FERMI NATIONAL
ACCELERATOR LAB.

DATE: 2nd DEC 91
TIME: 11:10

FAX NUMBER: _____

FROM: RICHARD SMITH

NUMBER OF PAGES: 1

MESSAGE:

FURTHER TO YOUR FAX DATED 26th NOV.
TO PETER CLARK

IT WOULD APPEAR THAT THE SOLENOID
MAGNET IS TRANSPORTABLE BY AIR USING
HEAVYLIFT'S ANTONOV AN-124 AIRCRAFT.
OF COURSE A SUITABLE TRANSPORT SKID
WOULD HAVE TO BE DESIGNED AND
BUILT BUT HEAVYLIFT CAN ADVISE FULLY
ON THIS ASPECT.

AS A BUDGET RATE INDICATION THE
CURRENT PRICE WOULD BE \$420,000 FOR
A CHARTER FROM TOKYO TO DALLAS.
IF YOU REQUIRE FURTHER ASSISTANCE PLEASE
CALL PETER OR MYSELF.

HEAVYLIFT CARGO AIRLINES LTD.
301 EAST 51ST STREET
KANSAS CITY, MO 64112
TEL: (816) 753-3337
FAX: (816) 931-8200

Regards
Richard Smith